Inclusive Use of Proctoring Technology: LockDown Browser & Respondus Monitor

Inclusive Use of Proctoring Technology: LockDown Browser & Respondus Monitor

duotl - November 16, 2020 - Inclusive Excellence

By Valentina Iturbe-LaGrave, Director of Inclusive Teaching Practices & Amelia Gentile-Mathew, Instructional Designer

As the academic quarter comes to an end, and we approach finals week, it is important to review key assessment technologies available to DU faculty for equity and inclusion. Two particular tools to pay attention to are LockDown Browser and Respondus Monitor. ***While we encourage instructors to use many of the features these tools offer, we caution against integrating the Facial Detection feature at this time. We invite you to consider creating alternatives to a final and exploring ways of moving your final exams online.*** We don't recommend using the facial detection feature based on the likelihood of false flags, which will be disproportionately attached to students of color, students with particular accommodation needs, and students who may not have fully stable internet or technological access throughout the exam.

UNDERSTANDING LOCKDOWN BROWSER & RESPONDUS MONITOR

LockDown Browser is a custom browser that locks down the testing environment within a learning management system. This feature can be used for online coursework and assessments, and this is how it works:

- Assessments are displayed full-screen and cannot be minimized
- Browser menu and toolbar options are removed, except for Back, Forward, Refresh, and Stop
- Prevents access to other applications including messaging, screen-sharing, virtual machines, and remote desktops
- Printing and screen capture functions are disabled
- Copying and pasting anything to or from an assessment is prevented
- Right-click menu options, function keys, keyboard shortcuts, and task switching are disabled
- An assessment cannot be exited until the student submits it for grading
- Assessments that are set up for use with LockDown Browser cannot be accessed with other browsers

Respondus Monitor is a fully integrated additional feature that enhances LockDown Browser by allowing the instructor to create the conditions of a more formal evaluation to deter cheating. This is how it works:

- Students use a webcam to record themselves during an exam.
- A "startup sequence" guides students through requirements selected by the instructor, such as showing identification or making a short video of the exam environment.
- Only the instructor can review video recordings and the results of the proctoring session.
- Powerful analytics are used to detect suspicious behaviors during an exam session.
- Segments with potential exam violations are flagged for the instructor, with an overall risk level assigned to the exam session. Learn more about Understanding Proctoring Results in Respondus Monitor.

UNDERSTANDING THE CONCERN WITH FACIAL DETECTION FEATURE

The Respondus Monitor Facial Detection feature is sensitive to lighting, body movements, and the quality of the video being sent via the webcam device; it is likely to disproportionately misregister students of color, students who engage in movement for concentration, and students who have more basic technologies in terms of webcam and internet access. Due to this, we advise instructors to ensure this feature is turned off when utilizing the Respondus Monitor feature. While Respondus Monitor will not prevent a student from completing their exam due to these factors, it will disproportionately incorrectly flag these segments for review by the instructor. Please know that OTL staff has been having open conversations with Respondus Monitor on issues of potential bias, and we feel it's essential to delve into some of those complexities to help administrators and users better understand them:

- **Facial recognition** is where facial features are converted to a set of unique identifiers or mathematical measurements (distance between eyes, length of nose, angle of the jaw, etc.) and compared to a database of known identities and mapped faces.
- **Facial detection** uses algorithms to determine whether a human face is present. For example, a Nikon camera uses facial detection to detect where faces are located in the frame. It doesn't convert those faces to a set of unique identifiers or check them against a database.
- Respondus Monitor doesn't save biometric facial data to a database, nor does it compare facial data to an existing database of mapped faces.
- There is currently an issue with the use of **facial detection** technology in proctoring for people with darker skin tones. The problem is mostly associated with lighting and can sometimes result in proctoring warnings that indicate the student cannot be detected in the video frame.
- There is robust ongoing conversation around the issue of race and photography/videography (in particular high contrast situations, and what is known as "white balance.") These are technical factors that greatly affect how clearly a person's face will appear in a video or photo. A majority of currently available video technologies lack functionality which would enable them to maintain appropriate contrast when the camera tries to compensate for white/bright backgrounds and darker skin tones. This problem is increased when a video is recorded with an inexpensive webcam that uses low-quality video drivers.
- Issues with identifying facial features can be further magnified by a slow internet connection which causes the frame rate to be lowered, thus resulting in less data (i.e. frames) being available for analysis.

HOW TO SUPPORT STUDENTS

- Let students know that if they cannot see themselves clearly during the pre-exam webcam check, the system is more likely to flag video segments where it cannot detect their face.
- Let students know that ***flagging doesn't mean that a student has cheated***. Rather, it means that the camera cannot identify the student in the frame for that segment, and it is alerting the instructor to that fact.
- The best way for students to improve the quality of their proctoring video is to reduce backlighting situations that cause the face to appear as a silhouette.
- Encourage all students to take exams in a well-lit room – ideally, with the light source in front of them, not behind them.
- Remind students that Respondus Monitor will alert them if the webcam is having difficulty detecting their face. A correction to the lighting situation will generally rectify this problem and discontinue the warnings during the exam.

OTL RESOURCES ON LOCKDOWN BROWSER & RESPONDUS

- https://otl.du.edu/knowledgebase/respondus-lockdown-browser/
- https://www.respondus.com/downloads/RLDB-QuickStartGuide-Instructor-Instructure.pdf
- https://www.youtube.com/watch?v=hv2L8Q2NpO4
- https://www.respondus.com/downloads/RLDB-QuickStartGuide-Instructure-Student.pdf
- https://otl.du.edu/knowledgebase/formatting-text-documents-for-respondus/
- https://otl.du.edu/knowledgebase/updating-your-respondus-license/
- https://otl.du.edu/knowledgebase/respondus-quiz-builder/
- https://www.du.edu/studentlife/disability-services/students/assistive-technology.html
- https://www.du.edu/studentlife/disability-services/testing-center/index.html

EXTERNAL RESOURCES ON LOCKDOWN BROWSER & RESPONDUS

- https://www.chronicle.com/article/behind-the-webcams-watchful-eye-online-proctoring-takes-hold/
- https://www.technologyreview.com/2020/08/07/1006132/software-algorithms-proctoring-online-tests-ai-ethics/
- https://www.nytimes.com/2019/04/25/lens/sarah-lewis-racial-bias-photography.html
- https://www.npr.org/sections/codeswitch/2014/04/16/303721251/light-and-dark-the-racial-biases-that-remain-in-photography